BGA IRDA-WELDER USER MANUAL

MODEL： T-890

TAIAN PUHUI ELECTRIC TECHNOLOGY CO., LTD

http://www.tech168.cn

Features:

1. This machine has the strong and perfect function selection, with eight temperature waves in the memory software, you can select the right temperature wave according to the solder/unsolder request.

2.Intelligent temperature wave heating, can achieve the solder/unsolder automatically.

3. Three-dimensional adjustable lamp body, use laser light, suitable for unsoldering any-angle components.

4. PID intelligent temperature control can avoid the IC damage due to the fast or uninterrupted warming up.

5. This machine has a super hot melt system, use infrared welding technology which is developed independently, heat is easy to pierce and distribute evenly, can suit for a variety of computer, notebook, play station's BGA components, especially in a Northbridge/ Southbridge chipset of computer.

6. Friendly human-machine operation interface, perfect LCD display, you can watch the whole repairing process very clearly.

7. Ergonomic design, practical and easily operated. Good build quality but at the same time light weight and a small footprint allows the T-890 to be easily bench positioned, transported or stored.

Technical parameters

Complete machine power	1500W
Rated voltage and frequency	AC 110-230 V 60/50Hz
Infrared lamp body power	300 W
Preheating chassis power	1200 W
Working bench size	320 X 330 mm

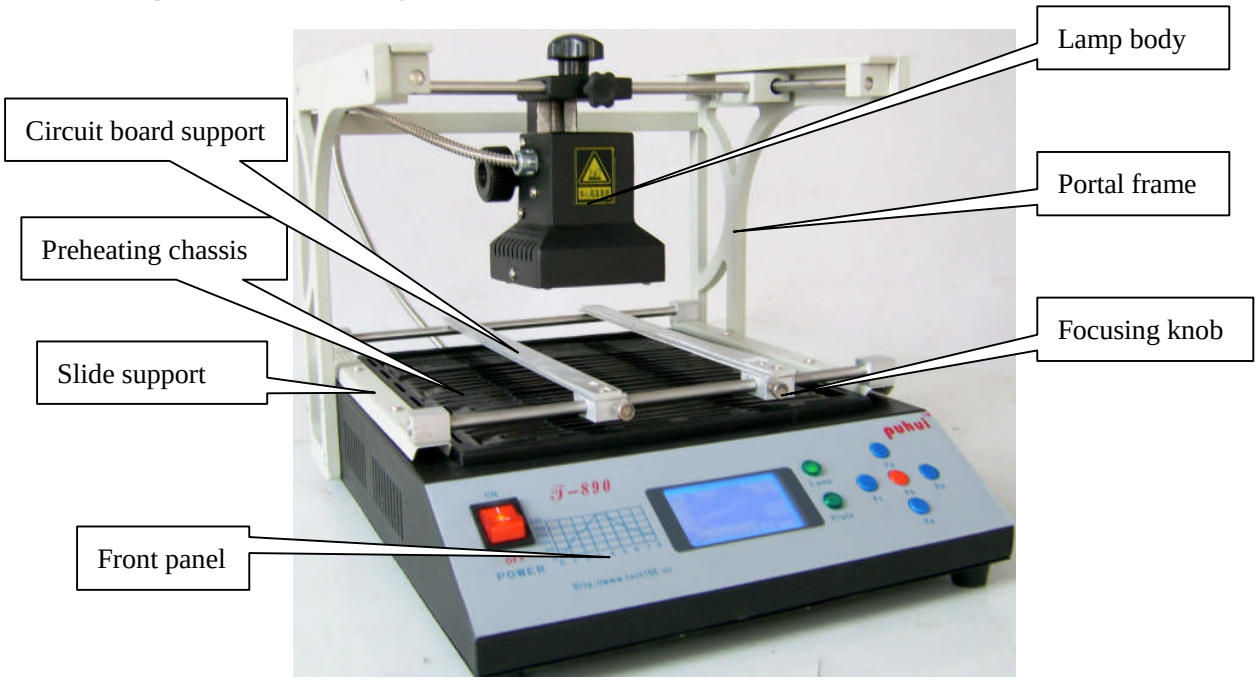
Infrared lamp body heating size	60 X 60 mm
Preheating chassis preheating size	245 X 260 mm
Preheating chassis temperature range	0 ℃-350 ℃
Size	316mm X 410mm X 290mm
Net weight	9.3 kg

Main parts

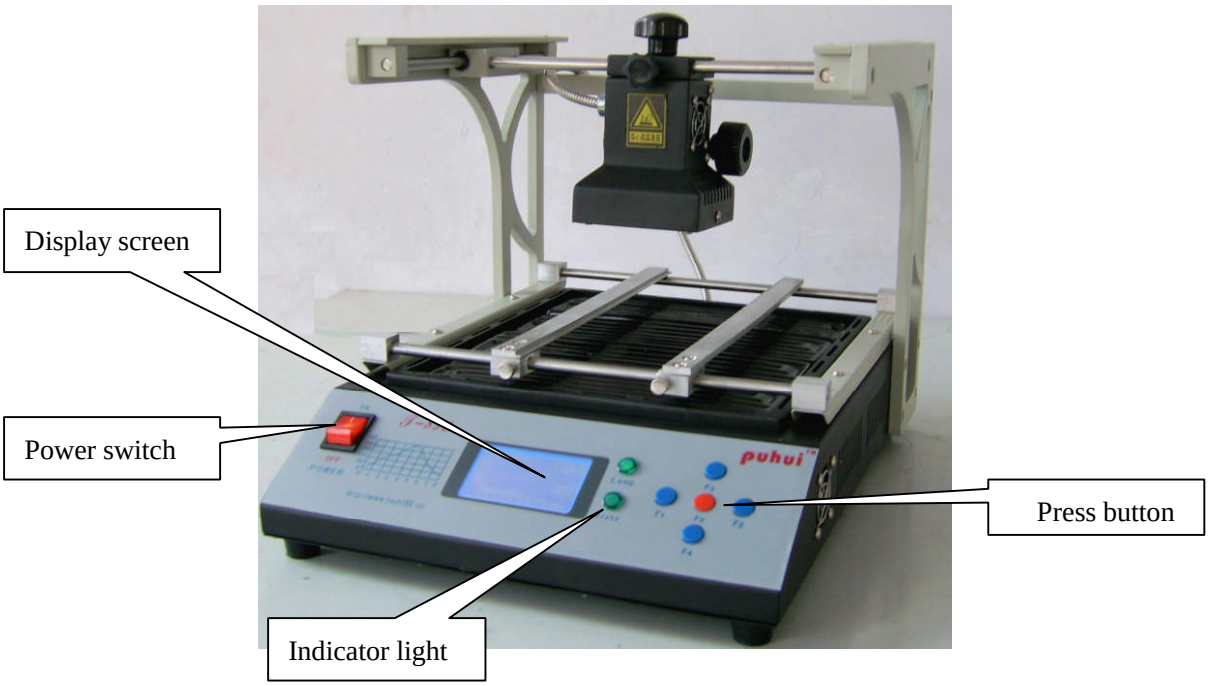
Welding table main body	1
Infrared lamp body	1
Portal frame	2
Power line	1
User manual(Compact disc)	1

Description of the main parts

1. Welding table main body



2. Front panel



3. Portal frame and lamp body

Operating instructions:

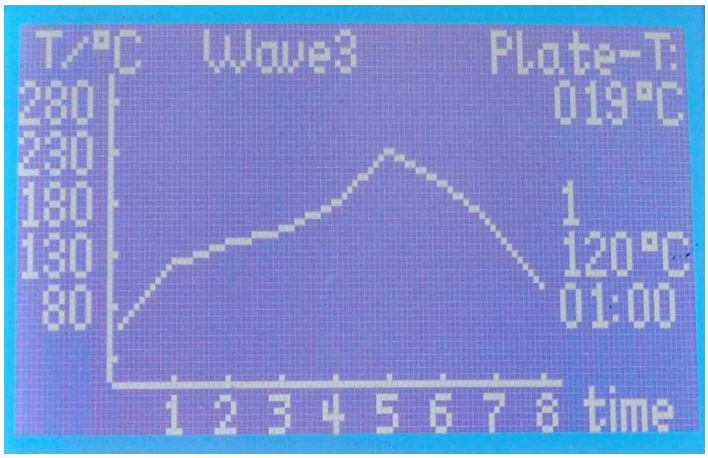
1. Examination and operation,

1). Place this machine on an even surface with good ventilation and no combustible items nearby. Leave at least 20mm on either side because the machine will emit heat when in use. Check the power supply voltage, connect the machine with the power supply, turn on the power switch, the LCD screen will display as follows:

5-1：Main manu page

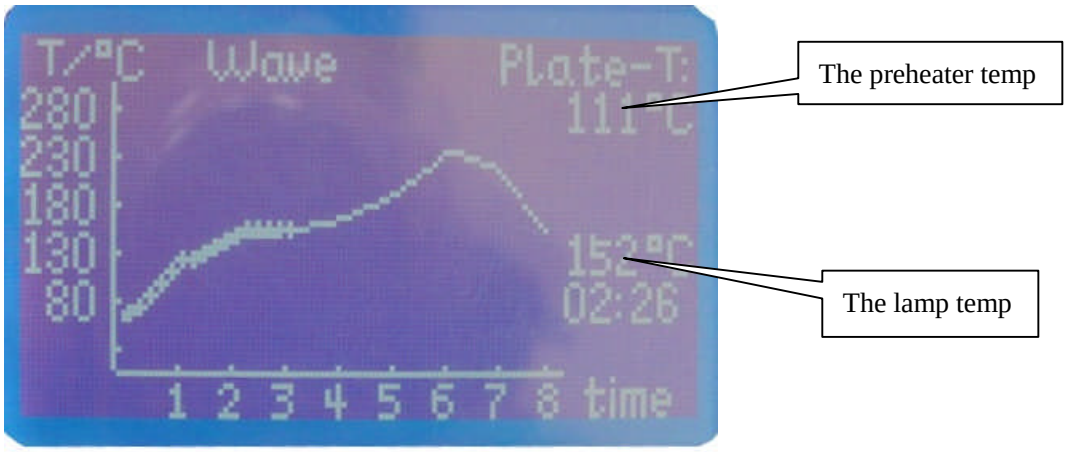
2) Press “F1” button (about 2 seconds) the preheating chassis starts to work, press “F1” button again to stop.

3). Press “F3” button enters to the PCB temperature adjusting page, press “F2” select different page, press “F3” select the temperature wave. The example shows wave 3.



5-2：Temperature wave selecting page

4). Press “F2” button, the infrared lamp start to heat up as the presupposed temperature wave.



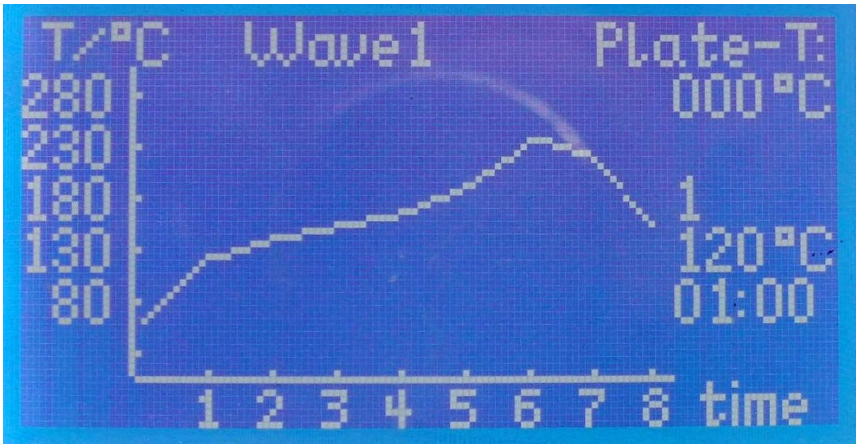
5-3：the LCD screen display page

5). When the process finished, return the previous page automatic. If you want to stop in the process, press “F3” button.

2. The wave selection and setting

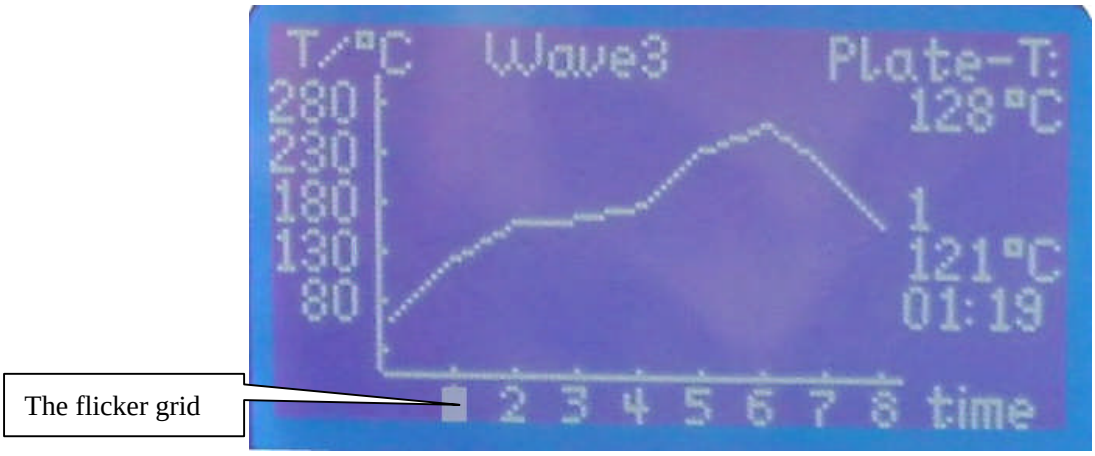
1). Press “F2” button enters to the select/set page, firstly, set the preheating chassis preheat temperature, press “F3/F4” buttons up and down to select different temperature, press “F1” button to save. When save succeed, the LCD screen displays as follows:

2). Press “F5” button, come to the Main Manu page, press “F2” button enters to the select/set page, the LCD screen displays as follows:



3). Press “F2” button enters to the select/set page, following we provide eight different wave cycles, please choose one according to your request, press “F1” to confirm the wave you choose, press “F2” button, come to the Main Manu page

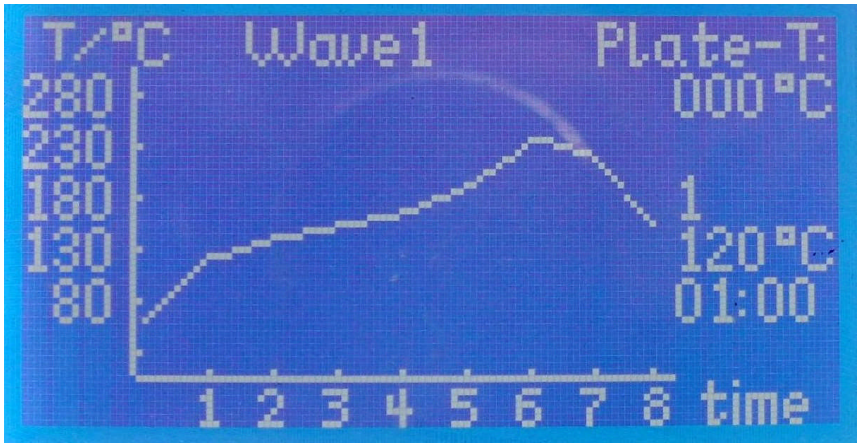
4). If you want to reset the wave, press “F5” button, when it flicker the grid, you can set. Press “F3/F4” buttons up and down to select different temperature, press “F1/F2” buttons forward and backward to select different time, press “F5” button to save.(the grid disappear, change to the previous flicker status), press “F4” button come to next Segment, the same method to set the wave, press “F1” button to save the current wave.



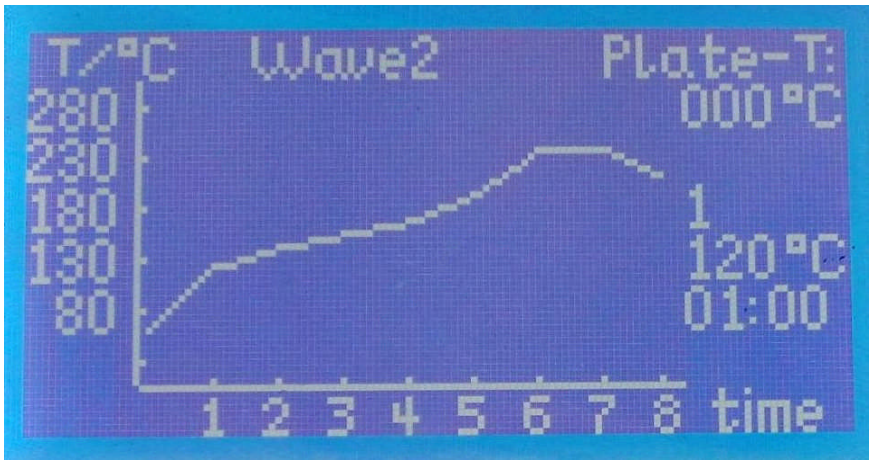
5). Press “F2” button, the lamp starts heating up according to the setting temperature.

6) Each temperature wave purposes as follows:

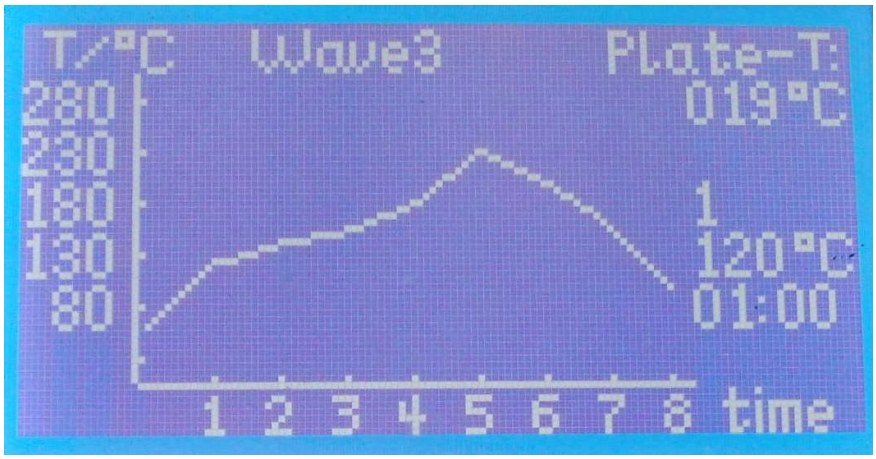
Wave one; use the same with soldering the less lead paste, like 85Sn/15Pb 70Sn/30Pb



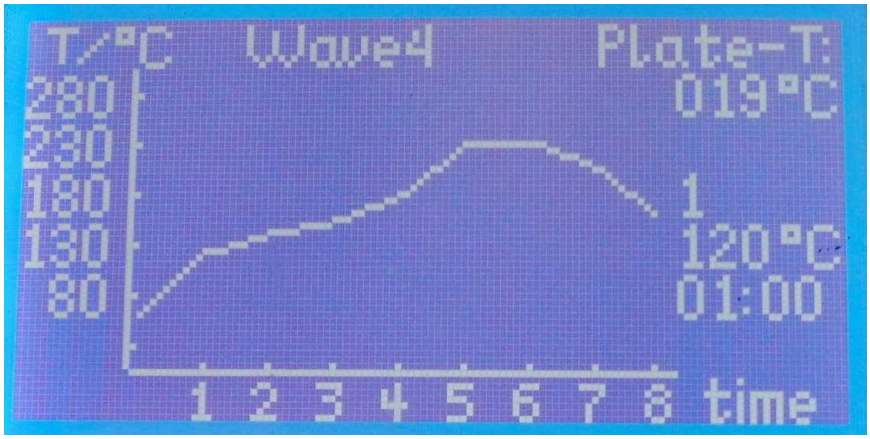
Wave two; use the same with unsoldering the less lead paste, 85Sn/15Pb 70Sn/30Pb



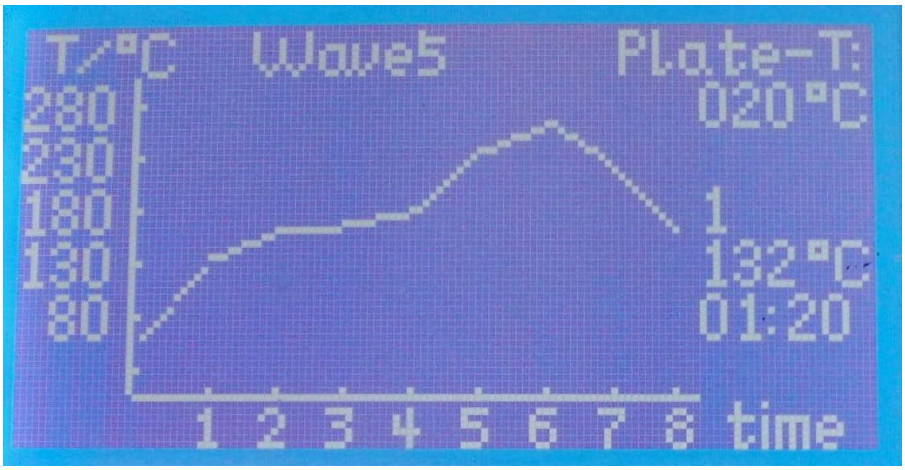
Wave three; use the same with soldering the more lead paste, like 63Sn/37Pb 60Sn/40Pb.



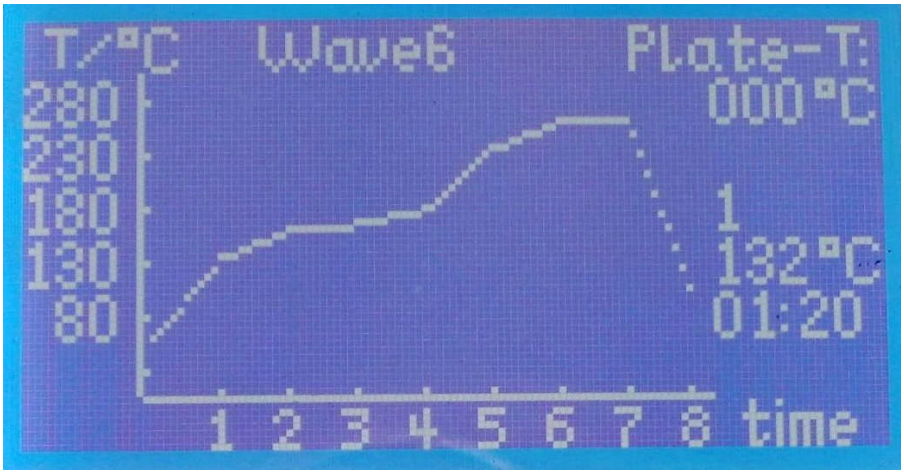
Wave four; use the same with unsoldering the more lead paste, like 63Sn/37Pb 60Sn/40Pb.



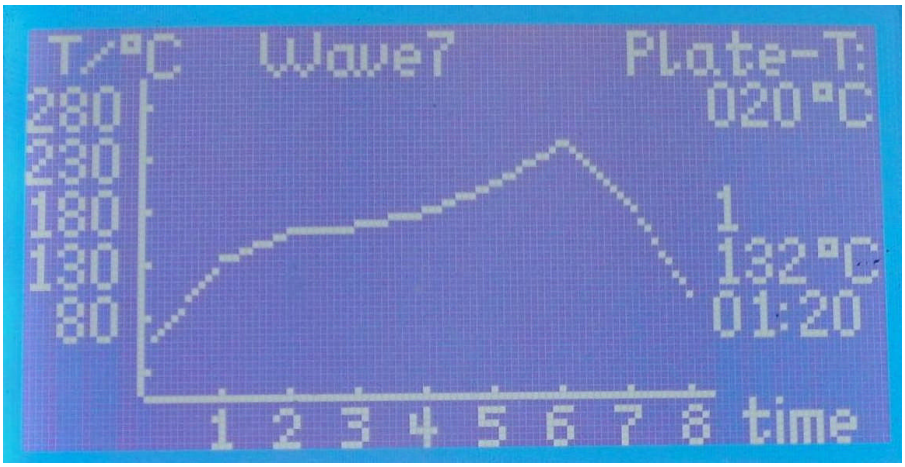
Wave five; use the same with soldering high-melting-point lead-free paste, like Sn/Ag3.5； Sn/Cu.75 Sn/Ag4.0/Cu.5 Sn95.5/Ag3.8/Cu0.7



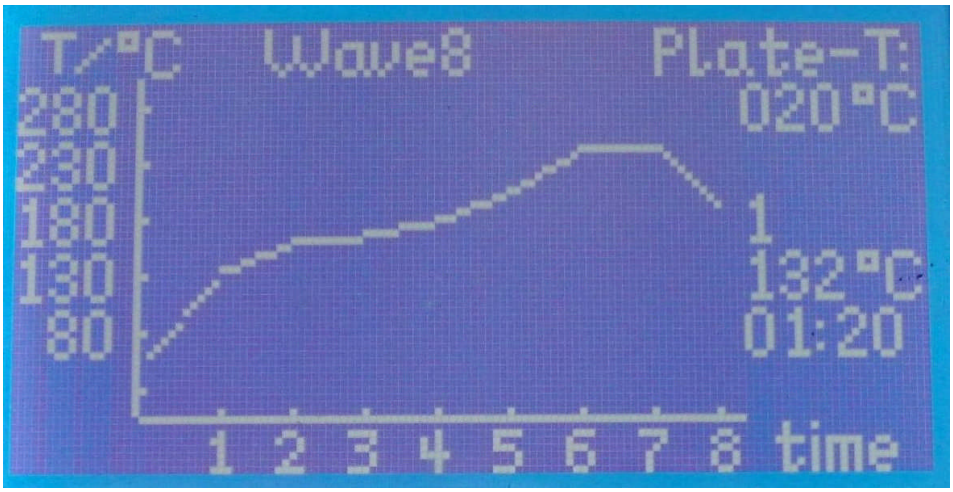
Wave six; use the same with unsoldering high-melting-point lead-free paste, like Sn/Ag3.5； Sn/Cu.75 Sn/Ag4.0/Cu.5 Sn95.5/Ag3.8/Cu0.7



Wave seven; use the same with soldering lead-free solder in melting point, like Sn/Ag2.5/Cu.8/Sb.5；Sn/Bi3.0/Ag3.0



Wave eight; use the same with unsoldering lead-free solder in melting point, like Sn/Ag2.5/Cu.8/Sb.5；Sn/Bi3.0/Ag3.0



Attentions:

1. According to the chips size and welding technological requirements, select the right wave to unsolder the chips, use tweezer or vacuum nozzle to remove the chips.

2. Infrared lamp temperature wave set, temperature and the rate of time can not be greater than 2 ℃ / S, each time setting value cannot exceed 250 seconds.

3. If you want to reset to Factory Default, press “F1” and “F5” at the same time, then turn on the power switch, when heard continuous buzzer is ok.

4. There are a lot kinds of solder paste, every company chooses is also not identical.

For these reasons, we design this product can set eight waves, each wave has eight sections, each section of the heating time and temperature all can alter. You can reset the heating waves according to the solder required heating temperature and time.

Foundation for wave set:

1. The reflow soldering theory and the temperature wave:

When the PCB board goes into heat up area (dry area), the solvent and gas in the solder paste will evaporate. At the same time, the flux can wet the pad and the component tip and foot. The solder paste melts, caves in and covers the pad, leading to the pad and component pins insulate the oxygen. PCB board goes into heat preservation area. PCB board and components get full preheating. In case of damaging the PCB and components when it goes into the welding area and the temperature heats up quickly. When PCB board goes into the welding area, the temperature heats up and the solder paste melts. PCB board goes into cooling area. Then the liquid solder paste the soldering points solidify. The reflow process is finished.

The temperature is the key to welding quality. The actual and the setting temperature warming slope and the peak temperature should be accordant. Before the temperature reaches 160℃, please control the heat up speed in about 1℃.If heat up too quickly, the PCB board and the components will be damaged, and the PCB board may be out of shape. On the other side, the flux volatilizes too fast. And it is easy to make soldering tin ball. Set the peak temperature 20℃-40℃ higher than the solder paste melting point. Set the reflow time 10S-60S. If the peak temperature is low or the reflow time is short, it will affect the welding quality, and serious is

causing the solder paste does not melt. If the peak temperature is high or the reflow time is long, the metal power will be oxidized and affect the welding quality and serious is causing the component and PCB board damaged.

2. The set of temperature wave:

Set the wave according to the solder paste and the above foundation. Different solder paste, choose and set different waves. In addition, the temperature wave has related to the PCB, the density and size of components. Generally lead-free welding temperature should be higher 40℃ than melting point.

Instructions:

1. Examination and starting

Inspect the infrared lamp body, temperature sensor and power line to check if they are in good connection.

2. Adjustment and preparatory work before sealing-off/repair

1). Put and adjust the PCB board:

Pull-out the slid support, unscrew the closing handle on the bracket, adjust the PCB board bracket, and put the PCB board aim at the bracket rabbet. Put the PCB board on the socket, screw the closing handle on the PCB board bracket, fix well the PCB board; move the slid support to choose the suitable operating position.

2). Adjust the infrared lamp holder:

Unscrew the lamp body closing handle, move the lamp handle, and make the infrared lamp laser aims at the middle of the sealing-off /repairing chip, screw the lamp body closing handle. Adjust the lamp body height by adjust whirl the focusing knob. And keep the ideal distance between the lamp holder and chip is 20-30mm.

3). Adjust the infrared lamp temperature sensor:

Put the infrared lamp temperature sensor on or around the chip. Then adjust the place of PCB board preheat temperature sensor, letting the sensor contacts the preheat plate well. In order to let the temperature measurement exact, put some flux around the chip and the head of sensor. At the same time, the BGA pad will be in good condition. Can effectively prevent the pad be adhered and prevent the pad has tin burr.

3. Sealing off/repair process:

The general sealing off process: fasten the PCB board, adjust it and the place of lamp, make the infrared lamp laser aim at the chip and adjust the height of the lamp, place the infrared lamp temperature sensor, put some flux, set the temperature of preheat plate. Then choose the temperature wave of the lamp, turn on the preheat plate and infrared lamp to heat up. When reach the peak temperature or the chip pad melts, put away the chip by the tweezer or vacuum nozzle. After carry out the infrared lamp temperature wave, it comes back automatically. When the main body cools down well, you should turn off the power supply.

The general reflow process operation: the operation is about the same to the sealing off. The differences are as the follow: first clean the pad and plant the solder ball, preheat up the PCB board, place the chip directly, preheat up according the solder ball reflow temperature, reflow and weld and cool down.

Sealing off/repair various kinds of the components, like CPU and GAP socket.

The operation is as follow: first use the aluminized paper to mantle the PCB fear heat part and the other components. Then fix well the PCB board on the PCB board

support. Then set the PCB preheat temperature between 160 and 180℃ and put the temperature sensor near the sealing off component. Turn on the preheat plate for 3-5 minutes or more. You can seal off when the component is equally heated. Specially, should turn on the upper infrared lamp to heat up, which can seal off quickly.

For the double side board, you can choose low temperature to preheat up the PCB board and then use the upper lamp to heat up.

4. Caution and direction when sealing off/repair process:

1). When the chip with waterproof solid sealing compound, can use sol hydrosol and other measure to sol. Pay attention to control the temperature when sealing off, In order to prevent the temperature sensor moves that lead to the temperature measurement isn’t exact. And the chip is heat for too long time, and the temperature is too high leading the chip heat damaged.

2). When the chip is big, for example:computerboard,XBOX360motherboard, When sealing off/repair big PCB board chip, for example, the computer board, XBOX360 motherboard, and so on, must certainly carry on the whole board preheat and dry, or according to the factory technological requirement, also may depend on the experience to process. Only then processes appropriately, can prevent effectively the PCB board distortion and produces from this faulty soldered joint, chip rake when sealing off/repair chip.

3). To the simple packaging chip, please pre-paste aluminized paper on the middle of the chip avoiding to heat the chip too hot to crack. The aluminized paper size should be a little bigger than the chip. Insure the size isn’t too big, or it will affect the result of welding. In the sealing off/repair process, the infra-red lamp shines in the region,

all plastic plug-in unit, carries on the cover using the aluminum tin foil, prevented high temperature infrared dries the distortion or the harm. But it is not wraps completely.

4). Clean and dry the PCB board after reflow and dry it, the check it; if it is not good, can reflow again. If it is still not good enough, please operate the whole process again.

Daily maintenance:

1. Clean the heating pipe of the lamp body bottom, after the machine has been used for a period of time.

2. Use the oil to clean the slipper of the connecting rod, the guide rod, polish rod, etc.

3. Do not cut the power off right after the work finished, You need wait until the fan cools down, so that to prolong the useful time.

Cautions:

1. Be careful of operating under high temperature condition.

2. Pull out the power if don’t use the machine for a long time.

Warranty：

The complete machine has a warranty period of 1 year from the time of purchase and lifelong service support as well as a long-term factory price supply. The life of the infrared lamp should be around 1000 working hours, guaranteed usable for 3 months. We provide online Q/A and troubleshooting support and technical advice service.

Statement:

The images and screenshots in this product manual may vary slightly from the actual purchased product.